Basic Social-Services Aid Distribution: Is It Reaching the Most Needy?

Distribución de la AOD en servicios sociales básicos: ¿se dirige a los más necesitados?

Yolanda Muñoz Ocaña
Universidad Loyola Andalucía
yolandam@uloyola.es

Mercedes Torres Jiménez
Universidad Loyola Andalucía
mtorres@uloyola.es

Abstract

The final objective of the eradication of poverty as pursued by Millennium Development Goals is to inexorably cover those Basic Social Needs in less developed countries. This article analyses whether Official Development Aid for basic social services is targeted at those who most need it, through the use of aid concentration curves and the Suits and weighted Kappa indexes. The analysis shows that, although in general the progressivity of the distribution has increased, the geographical mapping of aid varies considerably depending on the need under study (Education, Health, etc.) and the group being considered as the recipient of that aid.

Keywords: Official Development Aid (ODA); Basic Social Services; Human Development; Concentration curve.

Resumen

El objetivo de la erradicación de la pobreza perseguido por los Objetivos de Desarrollo del Milenio pasa inexorablemente por la cobertura de las Necesidades Sociales Básicas en los países en desarrollo. Este artículo analiza si la asignación de la ayuda en Servicios Sociales Básicos (SSB) se dirige a los países con peores coberturas, a través de curvas de concentración, el índice Suits y el índice Kappa ponderado. El análisis muestra que, si bien, en términos generales la progresividad del reparto ha incrementado, el mapa geográfico de la ayuda varía considerablemente dependiendo de la necesidad estudiada (Educación, Salud, etc.) y del grupo considerado como receptor de la ayuda.

Palabras clave: Ayuda Oficial al Desarrollo (AOD); Servicios Sociales Básicos; Desarrollo Humano; Curvas Concentración.

Clasificación JEL: F35, I31, O19.

1. Introduction

The Social Summit in Copenhagen in 1995 presented the first serious commitment by the international community, represented by donors who grant aid either bilaterally[1] or multilaterally[2], and receptors or partner countries who receive the aid. It manifested that the goal of all countries, namely to provide minimum coverage for basic social needs (BSN), should be moved into the realm of the actual reality of aid; this summit has not been the first to consider this issue.

Although years before many voices had already clamoured about the need to eradicate poverty by covering BSN, reports from Human Development in the United Nations Development Program (UNDP) in the early 90's laid the groundwork for what would come to be the final agreement adopted at the Copenhagen summit, held from March 6 to 12, 1995, recommending governments to dedicate half of their social budgets to human priorities, particularly basic Education, basic Health, safe drinking water, the elimination of malnutrition and access to family planning.

This Social Summit had been the largest gathering of world leaders to date. A year later, in April 1996 in Oslo, the commitment was outlined in what was known as the "Oslo 20/20 Consensus" according to which 20 per cent of the public spending of the partner country and 20 per cent of the development aid given by the donor country would go towards basic social services (BSS). It is true that there has not been a consensus on the concept of BSN and that numerous authors have developed different lines of thought on the subject.[3]

However, for the purpose of analysis we use the basic social services proposed by the Development Aid Committee (DAC) on June 14, 1999 (OECD, 2006) according to which the following sectors should be included as BSS: basic Education, basic Health, Population and Reproductive Health policies and programs, supply and purification of Water (minor systems) as well as the institutional capacity to provide these services (OECD 2006).

2000 was the year of the Millennium Summit, where the Millennium Development Goals (MDGs) were presented. They had a specific weight in BSN

[1] Donor country to partner country .
[2] Multilateral organizations to partner country.
[3] More details can be found in Muñoz, 2006.

coverage because they were directly related to five of their eight goals, namely: eradicating extreme poverty and hunger (goal one), achieving universal primary Education (goal two), reducing child mortality (goal four), improving maternal Health (goal five) and combating HIV, malaria and other diseases (goal six).

Although development cooperation through ODA aims to reduce the scourge of poverty, there are no clear results regarding economic growth in developing countries and the greatest coverage of basic needs (Hicks and Streeten, 1979; McGillivray, 1991; Tezanos, 2010). The efficacy of the aid has been the centre of international consideration in the new 21st century, both in the adoption of international agreements in this respect as well as in a great many specific studies, which have often led to contradictory results. Throughout this decade, many international conferences have been held in order to evaluate the efficacy of aid and in order to reach agreements to administer aid as efficiently as possible to the member country,[4] as well as other agreements on the funding for this aid.[5] These agreements recognize the need to assure the efficacy of aid, especially through the coordination of donors and the integration of the ODA with systems and political frameworks in recipient countries at both geographical and sector levels, highlighting especially social sectors. Moreover, in recent years there has been extensive discussion on the relationship between the effectiveness of development aid and good governance in recipient countries. There has been a questioning about whether merely belonging to the poorest group justifies the allocation of a greater amount of help or if, instead, factors such as economic policies, strong institutions, good governance and the absence of corrupt governments, and so on, should be taken into account.[6]

On the other hand, several authors have shown that donor countries select recipients of their aid in response to multiple criteria that are in many cases neither necessary nor effective. Alesina and Dollar (2000), Feeny and McGillivray (2008), among others, have found that bilateral ODA was dictated as much by donors' political and strategic motives as by need and local conditions in recipient countries. More recently, Berthélemy (2006) still labelled various donors as "egoistic," rather than altruistic. More specifically, some official donors tend to use aid to promote exports to recipient countries (see also Berthélemy and Tichit 2004; Canavire et ál. 2006; Younas, 2008); others may engage in "defensive lending" by using ODA to ensure that recipients can meet outstanding debt obligations (Birdsall, Claessens and Diwan 2003; Cohen, Jacquet and Reisen 2007); sometimes the trade interest of a donor country, for instance, may lie in promoting growth in developing countries, which are its major trading partners (Maizels and Nissanke, 1984) while still others "buy" political support by granting ODA (e.g., Kuziemko and Werker 2006; Dreher, Nunnenkamp and

---

[4] Roma, 2003; Paris, 2005; Accra, 2008; Busan, 2011.
[5] Monterrey, 2002; Doha, 2008.
[6] Alesina and Weder, 2002; Burnside and Dollar, 2000; Collier and Dollar, 2002; Easterly et al, 2004; Sachs, 2005.

Thiele 2006). Moreover some authors think that donor countries select recipients of their aid in response to multiple and different criteria depending on the relationship between donors and recipients (Younas, 2008). Most analyses detect a lack of a proposal for international assignation that would direct aid toward specific objectives in social and economic development that are found in the agreements but do not appear in the distribution of the aid (Olivié and García, 2010).

In this line, this study has aimed to ascertain if the geographical distribution of aid in BSS is evolving to a bigger concentration in favour of the most needy countries and populations. Therefore, the main goal of this research is to provide a positive analysis aimed at detecting whether the target of ODA in BSN, in the period 2000-2008 before the effects of the economic recession,[7] coincides with those countries that have the lowest coverage for these needs. This is done using concentration curves reflecting the aid, and the Suits index statistical indicator (Suits, 1977), as well as the weighted Kappa index (Cohen, 1968) to confirm or contradict Suits index values when they are not very reliable due to their well-known limitations (Davies, 1980; Kienzle, 1980; Suits 1980). The Suits index aims to measure the progressivity or regressivity of aid distribution in one single figure. This index can vary between -1 and +1. Both of the values represent two undesirable situations, namely the value -1 indicates that all aid is dedicated to the poorest country (thus eliminating the possibility that other poor and needy countries also receive some aid); on the other hand, the value +1 means that all aid is directed to the partner country that is the least needy. A zero value would, in principle, be close to the bisector. Cohen's kappa coefficient is a statistical measure of inter-rater agreement for qualitative (categorical) items. It is generally thought to be a more robust measure than simple percent agreement calculation since takes into account the agreement occurring by chance. The weighted Kappa index lets you count disagreements differently, that is, the magnitude of the error is not the same if the categories confused are in extreme positions rather than in other closer situations.

Concentration curves and the Suits index have been used in previous work.[8] The present paper focuses this methodology on analyzing geographical distribution of ODA for BSS, at both aggregated and sector levels.

Besides this general goal, a series of specific objectives are contemplated, namely:

- The analysis of the current ODA situation for BSS. This implies carrying out a descriptive analysis of the aid to determine the temporal evolution of the relative importance of ODA for BSS versus total ODA, as well as its degree of compliance with the 20/20 agreement. There is also an assessment of the differences in the distribution of aid for

---

[7] The scarceness of data about the post economic recession period, joined to the fact that nobody really knows when it is going to end, will make this the object of study in later research.

[8] Clark, 19991; Baulch 2003 and 2006; Mosley, 1987; White and McGillivray, 1995; Tezanos and Martínez, 2010.

BSS throughout the sectors during the period under analysis.
- Index selection to measure coverage in global BSN and in each of the sectors included, in order to use them to rank countries according to the degree of help required.
- Determining the 'relevant' population that should be the recipient of ODA for BSS. [9]

The article follows the following structure: the second section of the research (after the introduction) includes an analysis of the aggregated and sector indicators used to measure the coverage of partner countries in BSN, while the third section explains the methodology, concentration curves and the statistics used. The sources of data used for our analysis are shown in the fourth section, and the fifth presents the results of the study, developing curves at an aggregated level and by sector for the triennium 2000-02, 2003-05 and 2006-08. Finally, the main conclusions of this work are outlined, along with possible topics for further research following this study.

2. Indices Used to Measure Basic Social Need Coverage

This study aims to analyse the distribution of official development assistance in BSS. This requires BSN coverage to be measured at both global and sector levels. There are a great number of indices related to measuring gaps between different sectors, although there are fewer global indicators (as seen below).

2.1 Selection of Indices to Measure Global BSS Coverage

Various indices that have been identified to measure overall coverage of BSN are the Social Vulnerability Index (SVI), the Human Poverty Index (HPI-1) (transformed into the Multidimensional Poverty Index (MPI) since 2011).   The Index of Unsatisfied Basic Needs (INBio) and the Basic Capabilities Index (BCI) have been ruled out due to the limited availability of data in a large number of partner countries or years studied.[10]

After preliminary review, the best known index and the one that has the most information available is the Human Development Index (HDI). The HDI has been compiled by the United Nations Development Program (UNDP) since 1990 and is based on the idea of human development explained by the famous Nobel laureate Amartya Sen, Mahbub Ul Haq and Meghnad Desai, among others.

---

[9] One whose basic needs are really still not covered.
[10] More details about these indices can be found in Feres and Mancero, 2001; Muñoz and Torres, 2010; Pizarro, 2001.

However one study is identified as the BCI that most rigorously evaluates countries from the point of view of covering basic needs; therefore, it should be the index selected to assess countries' needs (Muñoz and Torres, 2010), Our study used HDI because our only data from the BCI is since the year 2007, which does not allow us to analyse the evolution of aid in the last decade. However, the BCI can be used in future studies conducted in this regard.

2.2 Selection Index by Sector

Just as the appropriate index for the ranking of countries has been selected taking into account their global BSN coverage, an index must be selected to measure coverage in each of the sectors implicated, namely basic Education, basic Health policies, policies with respect to Population and Reproductive Health, and access to safe Water and basic sanitation. All cases have required a double selection: on the one hand, a specific indicator to measure coverage and to rank countries according to their needs, and secondly, an indicator that determines what the target population in each country should be, that is, which country/ies really need help (Table 1). For example, a country with a low Educational development index should be a recipient of ODA in basic Education, but, when measuring distribution, who is chosen as the recipient of such aid - the entire population or only that part which really does not have this basic need covered? So it is possible in some cases for the recipient country to have a large volume of population with only a small percentage deprived of basic coverage in a specific need (relevant population), or just the opposite.[11] It is therefore necessary to identify the relevant population in each case, since the distribution of ODA varies significantly when considering the total population or only the relevant portion of it.

To rank countries according to their deficiencies in basic Health, regarding the indicator identifying the portion of the population that should be receiving health aid, it must be said that multiple options have been analysed: mortality rate before five years of age, total mortality rate, percentage of underweight children and percentage of the population that does not reach 40 years of age. Finally it was decided to select the percentage of population that does not live past 40, since this not only considers a wide spectrum of people who may require care, but there is also a high (0.98) and significant (α = 5 per cent) correlation with the Health indicator selected for ranking.

The ranking of countries according to their needs in Population and Reproductive Health policies produces a similar situation to that found for Health, as there are several related indicators, with the added aggravating circumstance that, in this case, the indicators are not very homogeneous because this DAC

---

[11] For example, the case of China and India, whose total population is approximately 25 per cent and 21 per cent of the total population of the partner countries; however, while the percentage of illiterate Chinese accounts for approximately 7.6 per cent of the whole illiterate population in partner countries, India's accounts for more than 33 per cent.

TABLE 1: SELECTED INDICES TO MEASURE COVERAGE IN BSS AND THE RELEVANT POPULATION.

SECTOR	Index to rank the countries	Total Population/ Relevant Population	Source of Data	Countries with information	Importance of Data lost
Basic Social Services	HDI	Total population	World Development Indicators 2009 (World Bank)	140	(*) 0.344%/ODA (TC)
		Poor population/ % population with <$1,25/day	World Development Indicators 2009 (World Bank	98	(*) 13.93%/ODA (TC) 5.27%/ODA (LC) 6.56%/TP (TC) 1.10%/TP (LC)
Basic Education	Education component in HDI	Total population	World Development Indicators 2009 (World Bank) Human Development Indicators 2009 (UNDP)	133	(**) 1.88%/ODA (TC) 0.38%/TP (LC)
		Illiterate population/%Illiterate population over 15 years old	UNESCO Institute for Statistics (2009a).	133	(**) 1.88%/ODA (TC) 0.38%/TP (LC)
Basic Health	Health Component in HDI	Total population	Human Development Indicators 2009 (UNDP)	139	(**) 1.31%/ODA (TC) 0.08%/TP (LC)
		% Population that does not reach 40 years of age	World Development Indicators 2009 (World Bank)	134	(**) 2.02%/ODA (TC) 0.19%/TP (LC
Population Policies/ Program. and Reprod. Health	IH Prevalence	Total population	ONUSIDA and Report about worldwide AIDS epidemic in 2008 of the WHO	107	(**) 18.72%/ODA (TC) 5.07%/ODA (LC) 12.93%/TP (TC) 4.79%/TP (LC)
		Population with VIH/ % population between 15 and 49 years with VIH	ONUSIDA and Report about worldwide AIDS epidemic in 2008 of the WHO	107	(**) 18.72%/ODA (TC) 5.07%/ODA (LC) 12.93%/TP (TC) 4.79%/TP (LC)
Water and Sanitation	Population without water access	Total population	World Development Indicators 2009 (World Bank)	133	(**) 5.76%/ODA (TC) 1.48%/TP (LC)
		% Population without water access	World Development Indicators 2009 (World Bank)	133	(**) 5.76%/ODA (TC) 1.48%/TP (LC)

Note: The importance of the countries eliminated are evaluated according to the percentage of aid that the eliminated countries receive out of the total aid distributed(TC); the percentage of aid that those countries with low HDI receive out of the total (LC) (calculated when the % of aid received by the countries is over 10% of the ODA; percentage of total population eliminated and percentage of population involved in the eliminated countries with low HDA (in the same cases explained previously); TP, indicating in all cases the data from the three year period with the greatest percentage of loss.(**) These percentages are added to those calculated previously for BSS, since the starting point is the 140 countries contemplated for BSS.

Source: Compiled by the authors.

code includes sections like: policies on population, reproductive Health, family planning, sexually transmitted diseases (mainly AIDS), and the training of Health personnel in these areas. Each of these headings, in turn, can have several indicators. In order to determine the indicator that should be used for the management of aid in this area, the weight of each subsector in the total subsidy of the DAC code has been determined. The fight against sexually transmitted diseases, especially HIV, has been a priority for the World Health Organization (WHO) in recent decades, occupying an important place in the MDGs. This is reflected in the percentage under this heading of total aid for Population and Reproductive Health, standing at around 45 per cent of the ODA for Population and Reproductive Health in the 2000-02 triennium, and growing after the second and throughout the third triennium, reaching 75 per cent at the end of this period.

3. Methodology

The analysis of the allocation of ODA to BSS was carried out in two ways: graphically and analytically. For the graphical analysis, the concentration curves of total aid and aid per sector are shown; for the quantitative analysis, the Suits index is used, the statistical counterpart of the concentration curves and the weighted Kappa index.

Concentration curves have been used more widely in recent years by numerous authors to evaluate the concentration of aid (Clark, 1991; Baulch, 2003; Baulch, 2006; Mosley, 1987; Tezanos and Martínez, 2010; White and McGillivray, 1995). These previous studies show, in our opinion, two areas in need of improvement. First, they consider the total ODA (without distinguishing the sectors included) as the variable whose geographical distribution is to be taken into account, regardless of its orientation toward achieving specific development objectives, i.e. the specific areas which the aid is intended to cover (Education, Health, etc.). We understand that the amount of aid should be related to the sector for which it is intended. Second, what is typically measured is the need of partner countries (who are assigned a priority for receiving aid), according to their per capita income (Baulch, 2006; Berthelemy and Tichit, 2004; Tezanos and Martinez, 2009).

This study overcomes the first weakness by considering the ODA to BSS (instead of total ODA) and sector-specific ODA considered for BSS: basic Education, basic Health, etc. (OECD 2006). With respect to the second, to test the hypothesis that poor people do not always coincide with the population with the lowest coverage for various basic social needs, a Pearson linear correlations analysis was carried out between the values selected to measure such coverage, and the proportion of poor people in different countries (using data from 2007 which was the year that provided the most information). If all developing countries (with available data) are included in the analysis, there is a significant linear relationship between the proportion of population living on

less than $ 1.25 a day, the HDI and other selected indicators; but if we carry out the analysis segmented by groups of countries according to their HDI (low, medium or high), and also according to their greater or lesser percentage of poor (less than 30 per cent, between 30-50 per cent, over 50 per cent), we confirm that no such relationship exists for partner countries with a lower HDI or the highest percentage of poor (see Table 2) ; the coefficient was -0.246 and not significant. Therefore, results when using one indicator or another are not the same when trying to identify the relevant population group in precisely those countries that worry us the most, the neediest ones. Thus we believe it advisable to use sector-specific indicators of development in the process that assesses the geographical distribution of ODA for BSS.

Table 2: Linear Correlations (Lower Left Diagonal) and RHO Spearman (Upper Right Diagonal) among Development Indicators in Developing Countries with Low IDH (2007).

INDEX	HDI	Education (EDI)	Health	% Pop. HIV	% Pop. Water	% Pop. <1.25$ day
HDI	1	0.567**	0.646**	-0.299	0.496*	0.210
	25	24	25	22	25	21
Education (EDI)	0.576**	1	0.043	-0.488	0.317	-0.287
	24	24	24	21	24	21
Health	0.683**	0.043	1	0.368	0.426*	0.256
	25	24	25	22	25	21
% Pop. HIV	0.273	0.546*	-0.409	1	0.007	0.269
	22	21	22	22	22	20
% Pop. Water	0.569**	0.569**	0.388	0.018	1	0.118
	25	25	25	22	25	21
% Pop. <1.25$ day	-0.246	-0.246	-0.356	0.315	-0.135	1
	21	21	21	20	21	21

Note: The symbol *and ** means the correlation is significant at $\alpha = 0.05$ (*) or $\alpha = 0.01$ (**).The number of countries with available data for each pair of development indicators is shown under the corresponding value in each case. For example this number is 24 for HDI-EDI.

Source: The authors.

This study uses concentration curves to verify whether the neediest countries are those that generally receive this aid. Inspired by the Lorenz curve, the concentration curves in this study are represented on a coordinate axis: the cumulative percentage of aid given by donors (bilaterally and multilaterally) on the ordinate axis, and the cumulative percentage of the population that receives it on the abscissa. Unlike the Lorenz curve, the variable whose distribution is under analysis is not ranked in ascending order, but the aid-receiving countries are ranked according to their need for aid (from highest to lowest), and then the amount of aid received by these countries is measured along with their population, accumulating both the variables of aid and population.

To construct the concentration curves of ODA for BSS corresponding to each triennium, the recipient countries are ranked in ascending order according to their HDI; the ODA received by these countries is calculated for the three trienniums under study, and the cumulative percentage of the ODA received by these countries is calculated out of the total distributed. The abscissa represents, in the first case, the cumulative proportion of population in receiving countries that had been previously ranked, and in the second, the proportion of relevant population, i.e. the part of the population in each country seeming to lack coverage in the basic social needs analysed. Then there is an analysis of the concentration curves of the ODA meant to cover every basic need in particular; that is, basic Education, basic Health, Population and Reproductive Health and access to clean Water, using in each case a specific indicator to measure the degree of coverage in partner countries for each need and to calculate the relevant population that should be receiving each type of aid in each member country, as explained above.

The ranking order of the countries allows the concentration curve to go either above the bisector (if the most needy receive proportionately more aid than the less needy) or below (if the opposite occurs). The first case would indicate a progressive aid distribution (more help for greater need) and the second a regressive aid distribution. There could also be a case where a single curve crosses the bisector once or more often. If the curve of concentration of the aid coincides with the diagonal, it would indicate a fair distribution of aid, as it would mean an equal distribution of aid among different countries without addressing any standard of need or development. Therefore, we believe that, although we cannot define the optimal distribution, the curve should go above the diagonal in order for the aid to be proportionately more beneficial for the most needy in conjunction with the Millennium Project report which recommended the withdrawal of aid from middle-income partner countries that could achieve MDGs with their own resources, non-concessional flows and private capital flows (Millennium Project, 2005).

In accordance with the curves, the Suits index aims to measure the progressivity or regressivity of aid distribution in one single figure (Suits, 1977). This index can vary between -1 and +1. The extreme values represent two undesirable situations, namely, the value -1 indicates that all aid is dedicated to the poorest country (thus eliminating the possibility that other poor and needy countries also receive some aid); on the other hand, the value +1 means that all aid is directed to the partner country that is the least needy. A zero value would, in principle, be close to the bisector, and therefore would suppose a balanced distribution of aid to all countries, without taking into account any measure of the need for it (which, as already mentioned above, does not seem appropriate). We cannot indicate exactly what the optimal Suits index value ought to be, but we believe that it should be negative and that no extreme would seem appropriate.

Although the Suits index is well known and commonly used, it presents a number of limitations that we cannot ignore (Davies, 1980; Kienzle, 1980;

Suits, 1980). First, it adds whole areas above and below the bisector, compensating them so that an index value of 0 can represent a balanced distribution, but it can also be an area above the bisector at the beginning, in the first countries, or an area of equal size, below the diagonal, for later countries considered (the most needy would be favoured at the expense of the less needy), or vice versa. From Suits' standpoint, the above situations are similar to many other variations where areas are compensated, while from the standpoint of distribution of aid, they are clearly different situations. Secondly, two curves with different slopes involving larger areas at the beginning or larger areas at the end are evaluated very differently from the standpoint of aid, while the Suits index can consider them as equal. It would be necessary to differentiate according to where the biggest areas are concentrated, and if they are in the countries suffering from more or less need.

To overcome the above disadvantages of the Suits index, the weighted Kappa index (Cohen, 1968) has been calculated and compared to Suits values. To this end, countries have been ranked according to the value of the indicators selected (Table 2) for the analysis of each sector and grouped into quartiles, from the highest (first quartile) to the lowest (fourth quartile) amount of need. Countries have been subsequently also ranked according to the per capita ODA received, considering the total population in the first analysis as the recipient population, followed by the relevant population. The ODA received was also grouped into quartiles (the first quartile being those receiving the most, while those in the fourth quartile get the least). The two classifications have been compared, obtaining respective contingency tables and Kappa index values. These values may be negative if the agreement observed among the classifications is less than what was expected (which could only happen by mere chance); equal to zero (if the observed agreement matches was what was expected, meaning that there is no agreement between the classifications); or equal to one (if the agreement between the two classifications is perfect). So, the closer it is to one, the greater the agreement. As this is a case of ordinal ranking, where there is an order of ranking among different categories (from the greatest to the least necessity, from highest to lowest per capita ODA received), we decided to assign weights to the different possibilities of disagreement, so that disagreement between distant categories (one and four) is considered to be more significant than between close ones. To do this, we calculated what is called weighted Kappa, using the most standard weights, i.e., linear (Cohen, 1968) and biquadrate (Cohen and Fleiss, 1981). Both weights range between zero and one, reaching the maximum value (1) at perfect agreement between categories and falling proportionally as the degree of disagreement between them increases, until reaching the minimum value (0) in the case of confusion between extreme categories. In our case this would occur if countries that are in the neediest group find themselves, however, in the last group which receives the least per capita ODA, or vice-versa. Linear and biquadrate weights coincide in value in extreme cases of perfect match (one) or in total disagreement (0), and are lower in the case of linear ones and higher in the case of biquadrates. Therefore, the linearly weighted Kappa will always be

less than biquadrate-weighted Kappa. The margins used to assess the degree of agreement according to Kappa index values are those proposed by Landis and Koch (1977).

4. Data

A large volume of data has been handled, all coming from sources of proven international reputation (as seen in Table 1).

The data source used for ODA was the on-line database of the Development Assistance Committee (DAC) (OECD, 2010-2011). The decision to analyse aid by trienniums instead of annually is due to the previous analysis of annual aid, which detected the irregularity of aid in consecutive years, leading to a distorted analysis depending on the year included. To smooth out these irregularities and work with more stable data, we decided to evaluate the aid by trienniums, as recommended by the DAC (OECD, 2006), using the three-year periods 2000-02, 2003-05 and 2006-08 for comparative analysis. With regard to donors, the data refer to official development assistance, both bilateral and multilateral.

The variable represented on the ordinates refers to constant ODA commitments in 2008 dollars instead of ODA disbursements, since the study aims to assess how countries are selected when aid is distributed in terms of existing need; thus it is necessary to select the variable the donor has the most control over. The aid pledged is the best reflection of the decision of the donor, who is the one that totally controls commitments. This does not happen with disbursements of aid, which partially depend on the recipients and their ability to manage the money (Berthelemy and Tichit, 2004; CAD 1999). Distributed aid would be more advisable when evaluating the actual amount transferred from donors to recipients (White and McGillivray, 1995). ODA curves are also given for each specific BSN (basic Education, basic Health, policies of Population and Reproductive Health and access to drinking Water).

The countries used in the analysis are the estimated 176 recipients of assistance under the DAC. Excluded from the analysis are all those countries for which no data on indicators or population was available, and where there was no possibility of estimation.[12] In some cases, in order to include as many countries as possible, we estimate the values of some indicators for a particular year based on their known values at previous or subsequent periods using linear regression.[13]

With respect to the year chosen, both for indicators and population for each triennium, the data selected were for the central year of the triennium,[14]

---

[12] These concepts caused 36 countries to be excluded; their corresponding aid was less than 0.4 per cent of total aid commitment for basic social services in any three-year period (table 1).
[13] All the settings showed R2 above 93 per cent.
[14] 2001 for the triennium 2000-02, 2004 for the triennium 2003-2005 and 2007 for the 2006-2008.

provided that this data was available; if it was not, the data closest to the refe-
rence year was used.

5. Results

5.1 Geographical Destination of the Aid

At first glance, it is interesting to compare the distribution of total ODA
allocated by sectors with the ODA destined to BSS, to check whether or not
the latter follows the same pattern of geographic distribution as the former, in
which it was included.

Total ODA allocated by sectors rose from a commitment of 58492.8 mi-
llion[15] to 112104.4 million in the period 2000-2008, so the amount of aid
granted practically doubled. In the period in question, total ODA for BSS in-
creased by almost 2.5 from a commitment of 8227 million to one of 20302
million. On measuring the proportion of ODA to BSS versus the total ODA in
this period, we can say the weight of 14 per cent in 2000 increased to 18 per
cent in 2008. This then approached the 20 per cent target set in Oslo although
it had not yet reached it (in 2006 it rose to 19 per cent but in the last years
studied, it fell to 18 per cent). Analysing the trend of both total ODA as well as
that intended for BSS, the rate of growth was not steady, and the aid to BSS
even decreased during some years (2001 and 2005).

By sector, the most important quantitative growth was in policies and pro-
grams for Population and Reproductive Health, which rose from 33 per cent to
46 per cent of ODA for BSS in the trienniums under analysis (Table 3). Basic
Health followed at 30 per cent, then basic Education (which dropped from 25
per cent to 17 per cent) and Water (down from 13 per cent to 6 per cent).

Table 3: Sectorial Distribution of BSS ODA[16].

SECTOR	2000-02	2003-05	2006-08	Relative Importance		
Total ODA (sectorially distributed)	183199	239293	305755			
Total BSS ODA	25132	38501	56212	14%	16%	18%
Basic Education	6362	9628	9579	25%	25%	17%
Basic Health	7163	11148	17277	29%	29%	31%
Population and Reproductive Health	8305	14612	25775	33%	38%	46%
Water and Sanitation	3302	3113	3581	13%	8%	6%

Source: Compiled by the authors.

[15] All ODA date are constant 2008 USD.
[16] Commitments in million constant 2008 US$.

Analysing countries where aid was distributed for BSS, five countries accounted for 30 per cent of the aid during the period 2000-2008. These countries were, in order of importance: India (over 10 per cent), Nigeria (5 per cent), Tanzania, Ethiopia and Bangladesh (each one accumulating about 4 per cent of aid). Among the top 25 receivers, only six countries had a low HDI (15 per cent of the total countries with a low HDI), and the rest were medium-high.

Looking at per capita ODA, considering the relevant population, the order of the countries changed notably, figuring among the highest Guyana, Jordan, Albania, Moldova, Bosnia-Herzegovina, Montenegro, Gabon, and so on; these countries, however, accounted for only a small percentage (around 2 per cent) of total ODA for BSS. Therefore, the countries that received more aid per capita were usually the smallest, thus confirming the bias in the allocation of resources in favour of less populous countries, as already shown in previous studies (Isenman 1976; Tezanos and Martinez, 2009). Among the top 25 countries receiving aid according to their per capita ODA, there were none with low HDI (Djiboutian was the one with the lowest HDI in the group, equal to 0.520, while the lowest HDI with respect to all the recipient countries, equal to 0.270, corresponded to the Democratic Republic of Congo).

If we analyse the BSS from ODA received by countries with lower HDI, countries seen to be the forgotten ones in the group of the neediest are Niger, Sierra Leone, Chad, Central African Republic, Guinea Bissau, Guinea, Liberia, Gambia, Togo and Cote d'Ivoire.

5.2 Concentration in the Distribution of Aid

With respect to the degree of concentration in the distribution of aid according to the needs of their recipients (both total ODA and ODA for BSS), we found that ODA distributed for BSS mainly considered the recipient nation's total need for ODA, since the curve representing the former was more detached from the bisector right from the start. This held for the three periods of analysis, whether considering the total population of recipient countries (Figure 1) or including only the relevant population (Figure 2). This population is represented here by the population in extreme poverty because, although this indicator, as mentioned above, does not seem the most suitable to represent a population lacking in basic social services, we have not found a better overall global indicator to represent this population.
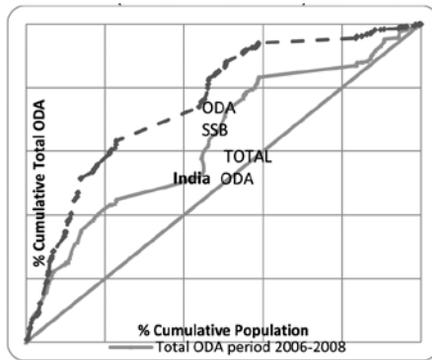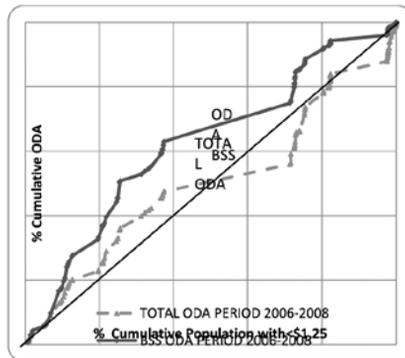
Source: The authors.

As can be seen, all curves present two slopes that are less steep, almost horizontal and parallel to the abscissa, that represent India and China; this occurs due to the high proportion of people in these two countries. When only the population in extreme poverty is included on the x-axis, the concentration curves indicate less progressivity in the distribution of aid, since they are closer to the bisector, and in the case of total ODA, even cross the bisector.
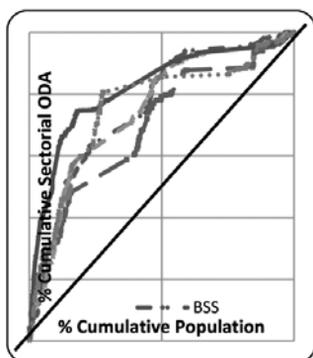
Source: The authors.

If we repeat the analysis for each sector included as BSS, considering the total population as the recipient of aid, both the concentration curves (Figure 3) and the relevant Suits indices (Table 4) for all periods indicate progressive aid distribution (the people in the poorest countries receive proportionately more aid).

Figure 3: Concentration Curves of ODA for Bss in the Last Three Year Period, Plotting the Total Population of the Recipient Countries on the X Axis.

Source: The authors.

Table 4: Suits Index Obtained Considering Total Population or Relevant Population as the Recipient of the Aid.

| ODA Destination Sector	TOTAL POPULATION				
	Period 1 (2000-02)	Period 2 (2003-05)	Period 3 (2006-2008)	Average	Variation Coeff.
All sectors	-0.1605	-0.2228	-0.2728	-0.2187	25.73%
BSS	-0.4287	-0.4708	-0.5112	-0.4702	8.77%
Education	-0.4032	-0.4006	-0.3949	-0.3996	1.06%
Health	-0.4775	-0.4218	-0.4998	-0.4664	8.61%
Population policies and Reproductive Health	-0.5219	-0.5891	-0.6357	-0.5822	9.83%
Water and Sanitation	-0.2211	-0.4291	-0.5165	-0.3889	39.02%
ODA Destination Sector	RELEVANT POPULATION				
	Period 1 (2000-02)	Period 2 (2003-05)	Period 3 (2006-2008)	Average	Variation Coeff.
All sectors	-0.0973	0.0521	-0.0011	0.0494	99.64%
BSS	-0.1549	-0.2081	-0.2448	-0.2026	22.31%
Education	0.0282	-0.0047	-0.0332	-0.0032	950.30%
Health	-0.1258	-0.0623	-0.1448	-0.1110	38.93%
Population policies and Reproductive Health	0.3222	0.2236	0.1681	0.2380	32.80%
Water and Sanitation	0.0702	-0.1013	-0.1497	-0.0603	191.73%

Source: The authors.

According to the Suits index, distribution of aid has been more progressive in the fields of Population and Reproductive Health; at a value of -0.58 this sector has been relatively the most important in ODA for BSS (averaging nearly 36 per cent of the ODA to BSS) followed by Basic Health, with a value of -0.46 (the second in order of importance, with 28 per cent of ODA to BSS). Water (10 per cent of ODA to BSS) and Education rates (26 per cent of aid) are somewhat lower (-0.39 and -0.40, respectively) while maintaining the progressivity of the assistance.

However, considering only the relevant population as the recipient, both the shape of the curves of concentration as well as their corresponding Suits indices vary considerably. The distribution of aid is much less progressive and, in some of the cases and periods analysed, the index values even become positive, thus implying a regressive distribution of aid (more aid is given proportionally to less needy partner countries). The most striking case is precisely the sector that represents the greatest weight in the total ODA to BSS, i.e., Population and Reproductive Health, whose Suits index in this second analysis renders positive values (0.23 on average). Thus our conclusion is opposite to the above one which takes the total population into consideration. That is, given that the population affected by HIV is the recipient of this aid, which most of the ODA in this sub-sector is dedicated to (70 per cent higher than the total ODA for Population and Reproductive Health since 2005), the distribution has not only been regressive, but has been the most regressive of all the sectors. Analysing the causes of this regressivity, there exist countries in Austral Africa like Lesotho, Zimbabwe, South Africa and Mozambique which, despite suffering high rates of HIV prevalence, have been infra-assigned ODA in the distribution destined to the sector. Nevertheless, the value of the Suites index has dropped from 0.32 to 0.17 in the time period under consideration, which indicates some improvement in the distribution of aid to the most affected.

In the case of ODA for basic Education, the Suits index is on average close to zero, because if you look at the corresponding concentration curve (Figure 4), the area above the diagonal produced in the first part of the curve is offset by the area that falls below it in the second part. In the case of the ODA dedicated to access to safe Water and sanitation, on average the situation is much the same. Therefore, when considering the total population of recipient countries, a very different conclusion is reached from that which is apparent when considering the population of those recipient countries that really do not have their basic analysed needs covered. The geographical distribution of the aid would be less coherent following criteria of relevant population need than when considering the total population of the partner countries as the recipient.

Figure 4: Concentration Curves of ODA for BSS Plotting the Relevant Population of the Recipient Countries on the X Axis (Period: 2006-2008).
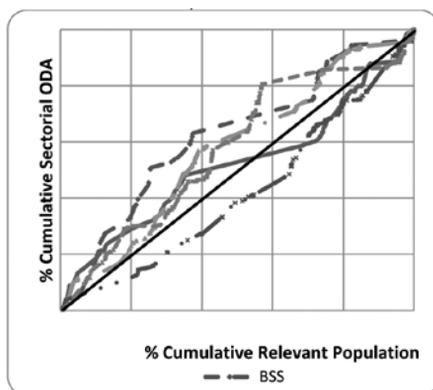
Source: The authors.

On analysing the temporal evolution of the curves and their corresponding Suits indices, we found that both in the case of total ODA and the ODA for BSS, the distribution of aid has improved, since it has increased progressively over the three-year periods considered (this happens whether considering the total population or the relevant population). The same goes for Population and Reproductive Health, and Water (although in these two sectors, the situation is much better when considering the total population instead of the part actually affected). Health waxes and wanes, worse in the second period and improving in the third. In the case of Education, with respect to the total population, the Suits index rate has remained fairly constant, worsening slightly over the three-year periods analysed. If we consider the relevant population, the Suits index is practically zero although the value of the index improved over the three-year periods analysed since it began being regressive and ended up progressive, as mentioned above.

The values of the Pearson coefficients of variation (Table 4) show how the Suits indices have been much more homogeneous for the trienniums under analysis which take into consideration the total population rather than the relevant population. (Water has greater variability at a coefficient of variation of 36 per cent, followed by total ODA at 26 per cent). In the latter case, the distribution of ODA in Education and Water shows more heterogeneous behaviour, with coefficients of variation over 100 per cent.

The Kappa index was also calculated, both unweighted and weighted, for total ODA destined to BSS and for what was targeted for each particular sector considered as a basic need (Table 5). We only take into account those situations where the Kappa index can help to shed some light, i.e. those cases where the concentration curves cross the bisector but the Suits index value is not

very reliable, a situation which arises when considering the relevant population (Figure 4). In this case, after comparing both indices, we can say that the only differences to be highlighted occur in the case of ODA for BSS which does not agree with Kappa (unweighted or linear weights) or would not be significant (if considering biquadrate weights) and yet the Suits was -0.25 (progressive, but moderate). In the case of Health and Water, both with Suits of -0.15, Kappa indicates varying degrees of agreement in both cases (low in Health, and moderate agreement in Water) and, moreover, greater agreement in both sectors than in the case of ODA for BSS in general.

TABLE 5: KAPPA INDEX (UNWEIGHTED AND WEIGHTED) OBTAINED IN PERIOD 2006-08, CONSIDERING TOTAL POPULATION OR RELEVANT POPULATION AS THE RECIPIENT OF AID.

Destination Sector of ODA	TOTAL POPULATION				
	CCR	Unweighted	Linear Weighted	Squared Weighted	Agreement
All	31.63	0.0880	0.2223	0.3240	Low
BSS	40.82	0.2107	0.4467	0.6344	Moderate-Good
Education	43.18	0.2107	0.3926	0.4924	Moderate
Health	42.45	0.2325	0.4996	0.6868	Moderate-Good
Population policies and Reproductive Health	53.27	0.3769	0.5817	0.7245	Good
Water and Sanitation	45.11	0.2670	0.4686	0.6109	Moderate-Good
Destination Sector of ODA	RELEVANT POPULATION				
	CCR	Unweighted	Linear Weighted	Squared Weighted	Agreement
All	12.24	-0.15	-0.2552	-0.2816	Disagreement
BSS	17.34	-0.102	-0.0319	0.0551	Disagreement or Nonsignificant
Education	21.97	-0.1113	-0.0509	-0.0213	Disagreement
Health	32.09	0.0945	0.2489	0.3699	Low
Population policies and Reproductive Health	24.29	-0.0094	-0.0628	-0.1111	Disagreement
Water and Sanitation	36.09	0.1478	0.3209	0.4413	Moderate

Note: CCR (Correct Classification Rate) is the percentage of countries in the same quartile according to classification related to need, and related to the per capita aid received.

Source: The authors.

Finally, taking the information from the contingency tables obtained for calculating the Kappa index, there were countries with the greatest possible disagreement between their classification according to their need for aid and the ODA received per capita (i.e. , where the extreme categories represented by quartiles one and four were confused). Therefore two extreme situations were identified: that of the countries that are in the group of the most needy and yet at the end of the queue with respect to the ODA they received per capita (the hardest hit) and those, in contrast, that are in the less needy group but at the head of the ranking for per capita ODA received (the most benefitted). The

countries that were hardest hit by low distribution of ODA for BSS were: Central African Republic, Chad, and Togo (all of them belonging to sub-Saharan Africa).

Among those who most benefitted are: Albania, Bosnia-Herzegovina, Georgia, Kazakhstan, Lebanon, Serbia, Nicaragua, Armenia and Tonga. There were different reasons for these over-assignations. In many cases the end of the aid has been marked by post-conflict rehabilitation and/or territorial reorganization, like Lebanon, Kazajstan, Georgia, Armenia Bosnia-Herzegovina and Serbia. In other cases donor interest in a country rises from historical connections and diplomatic relations with the receptor (Albania, former German protectorate; Nicaragua and Spain; Tonga with France and Germany). This corroborates the findings of some previous studies (Maizels and Nissante, 1984, Alesina and Dollar, 2000; Younas, 2008, Harrigan and Wang, 2004 among others) that show that donor interests (political, economic or commercial) are fundamental on numerous occasions when considering the need of the recipient, when deciding whom to assist.

6. Conclusions

First, it must be stressed that the ODA for BSS has presented signs of being a growing trend in the period analysed, even at a greater proportion than total ODA. This growth has been driven by the commitment acquired in the MDO, strongly linked to BSN coverage. In spite of this, at the aggregate level donors do not devote 20 per cent of their aid to BSN.

The sector that has received the largest amount of aid (40%) has been that of policy and programmes for Population and Reproductive Health, which is on the rise, followed by Basic Health (30% stable), basic Education (22% and falling) and finally Water and sanitation (9% and falling).

Going back to the initial question posed in this study, is the ODA for BSS aimed at the neediest? We affirm that the answer depends on two basic factors: on how the coverage is measured, that is, the index used to prioritize the countries, and also on how the population chosen to receive the aid is determined.

We recommend the BCI as the indicator that most reliably identifies the countries that should be priority recipients for assistance alleviating their needs in BSS, as it is not influenced by any income indicators and because it is the most rigorous in evaluating countries according to their coverage in basic social needs.

With respect to the objective population, it has been shown that the results vary significantly if the whole population of the country is taken into account or only a certain part determined in turn by a variable proxy used to identify the population lacking coverage (the relevant population).

The concentration curves lead us to conclude that the allocation of ODA for BSS has been distributed more progressively than total ODA, and this difference is maintained in all the periods analysed, both when considering the total population of recipient countries, and also when including only the rele-

vant population (the lacking coverage), although the latter case presents less progressivity.

Considering the total population, all sectors show some progressivity (the most progressive sector being Population and Reproductive Health). However, taking the relevant population into account, the escalation of aid drops significantly and in some cases even becomes regressive, as in the fields of Population and Reproductive Health.

Regarding analysis time, it can be stated that, in general, the trend in the progressivity of the allocation has improved over time. However, on analysing the geographical distribution of aid, there are countries in Sub-Saharan Africa that still are the greatest losers in distribution, which is why a greater effort is needed to reorient the flows of aid to these regions

This paper aims to be a jumping-off point for future research. For instance, an interesting area for analysis would be the behaviour of the ODA for BSS in the years following the economic recession. We can already say that the reduction in ODA in global terms as a consequence of the economic recession in countries that have traditionally been donors of DAC has been followed by an even steeper decline in the case of ODA for BSS (evident since 2009). Considering the different sectors included as BSS, the effects of this recession in some areas have not been as strong as in others. The most affected area (at the same time that of the lowest quantitative significance) is that of drinking Water and basic Sanitation, followed by Education and basic Health. However the Population and Reproductive Health sector seems not to have been unduly affected by the recession, at least until 2011.

On the other hand, it is interesting to analyse how the coverage of BSN in developing countries is influenced by the current context of international cooperation, characterized by new instruments and donors (like increased private investment, South-South cooperation, etc.) and by the interest manifested by receiving countries in greater participation and involvement in their own development following the post-15 agenda. Finally, it is also recommendable to analyse how the aid should be distributed if donors are not only to consider need as a criterion when allocating aid, but also other criteria related to the effectiveness of this aid.

REFERENCES

Alesina A. and D. Dollar (2000): "Who Gives Foreign Aid to Whom and Why?", *Journal of Economic Growth,* 5, 33-63.
Alesina A. and B. Weder (2002): "Do Corrupt Governments Receives Less Foreign Aid?", *American Economic Review,* 92, 1126-1137.
Baulch, B. (2003): "Aid for the Poorest? The Distribution and Maldistribution of International Development Assistance", *Chronic Poverty Research Centre* (University of Manchester), Working Paper, 35.
Baulch B. (2006): "Aid Distribution and the MGDs", *World Development,* 34 (6), 933-950.

Berthelemy, J-C and A. Tichit (2004), "Bilateral Donors" aid Allocation Decisions—A Three-dimensional Panel Analysis", *International Rewiew of Economics&Finance,* 13(3), 253,274.

Berthélemy, J.-C. (2006): "Bilateral Donors" Interest vs. Recipients. Development Motives in Aid Allocation: Do All Donors Behave the Same?", *Review of Development Economics,* 10 (2), 179-194.

Birdsall, N., S. Claessens and I. Diwan (2003): "Policy Selectivity Foregone: Debt and Donor Behavior in Africa", *World Bank Economic Review,* 17 (3), 409-435.

Burnside C. and D. Dollar (2000): "Aid, Policies, and Growth", *American Economic Review,* 90 (4), 847-868.

Canavire, G., P. Nunnenkamp, R. Thiele, and L. Triveño (2006): "Assessing the Allocation of Aid: Developmental Concerns and the Self-Interest of Donors", *Indian Economic Journal,* 54 (1), 26-43.

Clark, D. P. (1991): "Trade versus Aid: Distributions of Third World Development Assistance", *Economic Development and Cultural Change,* 39 (4), 829

Cohen, J. (1968): "Weighted Kappa: Nominal scale agreement with provision for scaled disagreement or partial credit", *Psychol Bull*, 70, 213-220.

Cohen, D., P. Jacquet and H. Reisen (2007): "Loans or Grants?", *Review of World Economics*, 134 (4), 764-782.

Collier P. and D. Dollar (2001): "Can the World Cut Poverty in Half? How Policy Reform and Effective Aid Can Meet International Development Goals", *World Development,* 29 (11), 1787-1802

Collier P. and D. Dollar (2002): "Aid Allocation and Poverty Reduction", *European Economic Review*, 46, 1475-1500.

Davies, D.G. (1980): "Measurement of Tax Progressivity: Comment", *American Economic Review*, 70 (1), 204-207.

Dreher, A., P. Nunnenkamp and R. Thiele (2006): "Does US Aid Buy UN General Assembly Votes? A Disaggregated Analysis", *Kiel Institute for the World Economy, Working Paper* 1275.

Dollar, D and V. Levin (2006): "The Increasing Selectivity of Foreign Aid, 1984-2003", *World Development*, 34 (12), 2034-2046.

Dowling, J.M. and U. Hiemenz (1985): "Biases in the Allocation of Foreign Aid", *World Development*, 3, 535-545.

Easterly, W., Levine, R. and Roodman, D. (2004): "New Data, New Doubts: A Comment on Burnside and Dollar´s Aid, Policies and Growth", *American Economic Review*, 94, 774-780.

Feeny, S. and M. McGillivray (2008): "What Determines Bilateral Aid Allocations? Evidence from time series data", *Review of Development Economics,* 12, 515-529.

Feres, J.C. and X. Mancero (2001): "El método de las necesidades básicas insatisfechas (NBI) y sus aplicaciones en América Latina", *Serie Estudios y Perspectivas* n° 002525, CEPAL-ONU.

Fleiss, J.L. (1981): "Statistical Methods for Rates and Proportions", *Wiley Series in probability and mathematical statistics,* 13, 212-236.

Harrigan, J. and C. Wang (2004): "A New Approach to the Allocation of Aid Among Developing Countries: Is the USA more Selfish than the Rest?", *School of Economics Studies*, Discussion paper 0412, University of Manchester

Hicks, N. and P. Streeten (1979): "Indicators of Development: The Search for a Basic Needs Yardstick", *World Development,* 7, 567-580.

Kienzle, E.C. (1980): "Measurement of Tax Progressivity: Comment", *American Economic Review*, 70 (1), 208-210.

Kuziemko, I. and E. Werker (2006); "How Much Is a Seat on the Security Council Worth? Foreign Aid and Bribery at the United Nations", *Journal of Political Economy*, 114 (5), 905-930.

Landis, J.R. and G. G. Koch (1977): "The Measurement of Observer Agreement for Categorical Data", *Biometrics*, 33, 159-174.

Isenman, P. (1976): "Bias in Aid Allocations against Poorer and Larger Countries", *World Development*, 4, 631-641.

Maizels A. and M. K. Nissanke (1984): "Motivations for Aid to Developing Countries", *World Development,* 12 (98), 879-900

McGillivray, M. (1991): "The Human Development Index: Yet Another Redundant Composite Development Indicator?", *World Development,* 19, 1461-1468.

Mosley, P. (1987): *Foreign Aid, Its Defense and Reform*, The University Press of Kentucky, Kentucky.

Mosley, P. (2001): "Attacking Poverty and the Post-Washington Consensus", *Journal of International Development*, 14, 307-315.

Muños, Y. (2006), "Las necesidades sociales básicas en las teorías del desarrollo", *III Congreso Universidad y Cooperación al Desarrollo,* vol.1, 102-122, Universidad Complutense

Muñoz, Y. and M. Torres (2010): "Cómo medir la cobertura en necesidades sociales básicas: IDH vs ICB", *Anales de Economía Aplicada 2010*, Asepelt-Delta.

Neumayer, E. (2003): *Explaining the Pattern of Aid Giving,* Routledge, London.

OECD (2006): "Analysis of Aid for Basic Social Services, 1995-2004" http://www.oecd.org/dataoecd/21/1/40162681.pdf (accesed 12 april 2011)

OECD (2010-2011): "Datos sobre AOD" http://stats.oecd.org/Index.aspx?DatasetCode=CRSNEW (accesed 23 may 2011)

Olivié, I. y García, C. (2010): "¿Dónde debe ir la ayuda? Propuesta de un índice de desarrollo par la asignación internacional de la ayuda". Revista *de Economía Mundial,* 24, 131-162.

Proyecto del Milenio (2005): "Invirtiendo en el desarrollo. Un plan práctico para conseguir los Objetivos de Desarrollo del Milenio" http://www.unmillenniumproject.org/reports/fullreport_spanish.htm (accessed 23 may 2011)

PNUD (2006): "Informe sobre Desarrollo Humano 2006" http://hdr.undp.org/en/media/HDR_2006_ES_Complete.pdf (accessed 16 may 2011)

Pizarro, R. (2001): "La vulnerabilidad social y sus desafíos: una mirada desde América Latina", *Serie de estudios estadísticos y prospectivos*, ONU-CEPAL, Santiago de Chile.

Quiñones, A. y Tezanos, S. (2011): "Ayuda Oficial al Desarrollo Científico-Tecnológica: una evaluación macroeconómica de la distribución geográfica y sectorial", *Revista de Economía Mundial,* 29, 153-179.

Sachs, J. (2005): *The End of Poverty,* Penguin Press, London.

Suits, D. (1977): "Measurement of Tax Progressivity", *American Economic Review*, 67 (4), 747-752.

Suits, D. (1980): "Measurement of Tax Progressivity: Reply", *American Economic Review,* 70 (1), 211.

Tezanos, S. (2010): "Ayuda y crecimiento: una relación en disputa", *Revista de Economía Mundial*, 26, 237-259.

Tezanos S. and A. Martínez (2010): "América Latina y el Caribe: Ayuda Oficial al Desarrollo en el punto de inflexión del Milenio", *Revista Problemas del Desarrollo*, 162 (4), 31-56.

White, H. and M. McGillivray (1995): "How Well is Aid Allocated? Descriptive Measures of Aid Allocation: A Survey of Methodology and Results", *Development and Change*, 26, 163-183

Younas, J. (2008): "Motivation for Bilateral Aid Allocation: Altruism or Trade Benefits", *European Journal of Political Economy,* 24, 661-674.